UNITED STATES PATENT AND TRADEMARK OFFICE

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10/516,693	12/06/2004	Masamichi Inenaga	Q85096	6877

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EXAMINER
AKANBI, ISIAKA O

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2007*.

2a)☒ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Amendment

The amendment filed on 05 November 2007 has been entered into this application.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 2 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply

with the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention. Paragraph [0043] of the published application as argued by applicant does

not appear to adequately disclosed applicant claim that recite "sequentially" as claimed in claims

1 and 2. Therefore this raises a new matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kiyokawa et al. (5,289,263) in view of Mimura et al. (5,880,816)

As to claim 1, Kiyokawa teaches of a wafer pre-alignment apparatus comprising a wafer rotating member (Mθ) capable of rotating a disk-shaped wafer held on a table having a vertical rotating axis, a rotation detecting member (encoder) for detecting a rotating position of the wafer rotating member and converting the rotating position detected into an electric signal (col. 6, line 23-24), a light emitting member (M1) for emitting light toward the periphery of the wafer held by wafer rotating member (col. 5, line 3-4), a CCD linear sensor (19) including a large number of pixels linearly arranged in a predetermined order, for reading stored charges successively from the first pixel according to a transfer pulse signal and successively outputting stored charges of all the pixels as electric signals, a signal processing member (24) for repeatedly detecting the edge positions of the wafer at a plurality of optional points over the outer periphery of the wafer when it receives a signal from the CCD linear sensor and a signal from the rotation detecting member and storing these edge positions thus detected in a memory, and acquiring at least one of an orientation - flat position, notch position and center position of the wafer on the basis of the edge positions detected and an up-down counter (38) counting signals (i.e. pulses)(i.e. clockwise/counterclockwise) received from the rotation detecting member(encoder)(col. 12, line 14-57), a measured angle setting register (Mθ) for storing angular value information which is obtained and a comparator (22) for comparing the angular value information set in the measured angle setting register and the counted value of the up-down counter (figs. 6,7, 8, 12-14,18 and 21)(col. 7, line 22-49)(col. 16, line 50-64).

Kiyokawa is silent regarding the angular value information which is obtained (i.e. by dividing the number of counts during a single revolution by the rotation detecting member by the number of measurement points during the single rotation). It would have been obvious to one having ordinary skill in the art at the time of invention to provide angular value information that is

obtained (i.e. by dividing the number of counts during a single revolution by the rotation

detecting member by the number of measurement points during the single rotation) for the

purpose of putting the value into a more convenient unit.

Further Kiyokawa discloses using a motor and CCD to acquired at least one of an

orientation - flat position, notch position and center position of the wafer on the basis of the edge

positions detected.

Kiyokawa fails to disclose wherein the apparatus is operable to sequentially load data

without stopping the motor, however, it would have been obvious at least to one of ordinary skill

in the art to substituted one known device/element (i.e. pulse/step motor) for another (i.e.

continues motor) as evidenced by Mimura (col. 5, line 33-35)(col. 12, line 21-54) to achieve the

predictable result of acquiring at least one of an orientation - flat position, notch position and

center position of the wafer on the basis of the edge positions detection with accuracy.

As to claim 2, Kiyokawa teaches of a wafer pre-alignment apparatus comprising a wafer

rotating member (Mθ) capable rotating a disk-shaped wafer held on a table having a vertical

rotating axis, a rotation detecting member (encoder) for detecting a rotating position of the wafer

rotating member and converting the rotating position detected into an electric signal (col. 6, line

23-24), a light emitting member (M1) for emitting light toward the periphery of the wafer held by

the wafer rotating member, a CCD linear sensor (19) including a large number of pixels linearly

arranged in a predetermined order, for reading out stored charges successively from the first

pixel according to a transfer pulse signal and successively outputting stored charges of all the

pixels as electric signals and a signal processing member (24) for repeatedly detecting the edge

positions of the wafer at a plurality of optional points over the outer periphery of the wafer when

it receives a signal from the CCD linear sensor and a signal from the rotation detecting member

and storing these edge positions thus detected, and acquiring at least one of an orientation-flat

position, notch position and center position of the wafer on the basis of the edge positions

detected, setting, in a measured angle setting register (Mθ), inputting a signal supplied from the

rotation detecting member (encoder) in an up-down counter (38) up-counts (i.e. clockwise)

during normal rotation of the wafer rotating member and down-counts (i.e. counterclockwise)

during reverse rotation of the wafer rotating member, if the comparator (22) determines that

rotation position information obtained as a result of an increase/decrease of the counted value

in the up-down counter during the rotation of the wafer rotating member is equal to the set value

in the measured angle setting register, zero-clearing (i.e. stop) the counted value

simultaneously with outputting of a measurement command (col. 7, line 36-49), repeatedly

detecting the edge position of the wafer at the measurement points over the outer periphery of

the wafer, storing detected values thus obtained in a memory (figs. 13-14)(col. 18, claim 8) and

acquiring at least one an orientation flat position , notch position and center position of the wafer

(col. 7, line 22-49)(col. 16, line 50-64), however the reference of Kiyokawa is silent regarding the

angular value information which is obtained (i.e. by dividing the number of counts during a

single revolution by the rotation detecting member by the number of measurement points during

the single rotation). It would have been obvious to one having ordinary skill in the art at the time

of invention to provide angular value information that is obtained (i.e. by dividing the number of

counts during a single revolution by the rotation detecting member by the number of

measurement points during the single rotation) for the purpose of putting the value into a more

convenient unit.

Further Kiyokawa discloses using a motor and CCD to acquired at least one of an

orientation - flat position, notch position and center position of the wafer on the basis of the edge

positions detected.

Kiyokawa fails to disclose wherein the apparatus is operable to sequentially load data

without stopping the motor, however, it would have been obvious at least to one of ordinary skill

in the art to substituted one known device/element (i.e. pulse/step motor) for another (i.e.

continues motor) as evidenced by Mimura (col. 5, line 33-35)(col. 12, line 21-54) to achieve the

predictable result of acquiring at least one of an orientation - flat position, notch position and

center position of the wafer on the basis of the edge positions detection with accuracy.

Response to Arguments

Applicant's arguments/remarks, (see pages 5), filed on 05 November 2007, with respect

to the rejection(s) of claim(s) 1-2 under 35 U.S.C. 112, first paragraph have been fully

considered and are partially persuasive. It is respectfully pointed out to applicant that par. 0043

does not disclose or describe the limitation "sequentially" as claimed in the instant claims 1 and

2 and thus the limitation, "sequentially" raises new matter and the rejection is maintained.

Further, in response to Applicant's arguments that the cited reference Kiyokawa, in

particular does not suggest the feature relating "to loading data without stopping the motor" it is

respectfully pointed out to applicant that by applicant's own account the rejection was made as

103(a) not 102 and the examiner did recognize that the limitation "determining a correlation

coefficient between two surfaces where one of the surfaces comprises the first surface" was not

taught by Kiyokawa but used Mimura (col. 5, lines 30-45, col. 6, lines 35-54, col. 12, lines 21-54

and col. 14, lines 57-65) to find this limitation. Additionally, the examiner recognizes that

obviousness can only be established by combining or modifying the teachings of the prior art to

produce the claimed invention where there is some teaching, suggestion, or motivation to do so

found either in the references themselves or in the knowledge generally available to one of

ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In

re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Finally, in response to Applicant's request to show where the feature "loading of data without stopping the motor" is suggested in the prior art, it is respectfully pointed out to applicant Mimura clearly discloses this limitation, such as in (col. 14, lines 57-65) the process of loading data without stopping the motor. As such, the rejection is still proper and thus maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur R. Chowdhury can be reached on (571) 272-2287. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi

January 30, 2008

/TARIFUR R CHOWDHURY/

Supervisory Patent Examiner, Art Unit 2886